Safety Data Sheet
acc. to OSHA HCS

Printing date 05/10/2023 Reviewed on 05/10/2023

*
1 Identification

· **Product identifier**

· **Trade name: Trichloroacetic acid, 20 % solution**

· **Article number:** 36913
· **Application of the substance / the mixture:** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SERVA Electrophoresis GmbH
Carl-Benz-Str. 7
D-69115 Heidelberg
Tel.: +49 6221 13840-0
FAX: +49 6221 13840-10
msds.info@serva.de

· **Information department:** Product Safety department Tel.: +49 6221 13840-35
· **Emergency telephone number:**
Medical Emergency Information in case of poisoning:
Poison Information Center Mainz - Phone: +49 (0) 6131 19240
(advisory service in German or English language)

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2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS05

Skin Corrosion 1A H314 Causes severe skin burns and eye damage.

GHS07

Specific Target Organ Toxicity - Single Exposure 3 H335 May cause respiratory irritation.

· **Label elements**
· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms:** GHS05, GHS07
· **Signal word:** Danger

· **Hazard-determining components of labeling:**
trichloroacetic acid
· **Hazard statements:**
Causes severe skin burns and eye damage.
May cause respiratory irritation.
· **Precautionary statements**
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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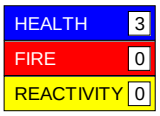
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 3
Fire = 0
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment:**
· **PBT:** *PBT - assessment not available.*
· **vPvB:** *vPvB - assessment not available.*

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3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** *aqueous solution*

· **Empirical formula:**		
7732-18-5	water, distilled, conductivity or of similar purity	H_2O
76-03-9	trichloroacetic acid	$C_2HCl_3O_2$

· **Dangerous components:**		
76-03-9	trichloroacetic acid	15-30%

· **Additional information:**
the product contains no further substances which shall be indicated according to REACH-Regulation (Regulation (EC) No. 1907/2006).
For the wording of the listed hazard phrases refer to section 16.

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4 First-aid measures

· **Description of first aid measures**
· **General information:** *Immediately remove any clothing soiled by the product.*
· **After inhalation:** *Supply fresh air; consult doctor in case of complaints.*
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly. Consult doctor if you feel unwell.
· **After eye contact:**
Rinse opened eye for several minutes under running water. Remove present contact lenses, if easy to do, and continue rinsing. Consult ophthalmologist immediately.
· **After swallowing:**
Wash out mouth instantly. Drink copious amounts of water and provide fresh air. Call for doctor immediately.
Do not induce vomiting!
· **Most important symptoms and effects, both acute and delayed** *No further relevant information available.*
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO_2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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· **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Hydrogen chloride (HCl)
Carbon monoxide and carbon dioxide
Phosgene gas
· **Advice for firefighters**
· **Protective equipment:** Wear self-contained respiratory protective device.

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6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Ensure adequate ventilation
Avoid contact with the eyes and skin.
· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up**
Dispose contaminated material as waste according to item 13.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
76-03-9	trichloroacetic acid	1.5 ppm

· **PAC-2:**		
76-03-9	trichloroacetic acid	16 ppm

· **PAC-3:**		
76-03-9	trichloroacetic acid	99 ppm

· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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7 Handling and storage

· **Precautions for safe handling:**
Avoid contact with eyes and skin.
Ensure good ventilation/exhaustion at the workplace.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Provide acid-resistant floor.
· **Information about storage in one common storage facility:**
Do not store together with strong oxidizing agents.
· **Further information about storage conditions:** Keep receptacle tightly sealed and store in dry conditions.
· **Specific end use(s):** No further relevant information available.

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8 Exposure controls/personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
76-03-9 trichloroacetic acid (15-30%)	
REL	Long-term value: 7 mg/m³, 1 ppm
TLV	Long-term value: 0.5 ppm A3

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Additional information about design of technical systems:** No further data; see item 7.
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Store protective clothing separately.
Immediately remove all soiled and contaminated clothing.
Avoid contact with the eyes and skin.
Wash hands before breaks and at the end of work.
· **Breathing equipment:**
Short term filter device:
Filter P2
· **Protection of hands:**
Neoprene gloves
Rubber gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Protective gloves
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves:**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material:**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Chloroprene rubber, CR
Nitrile rubber, NBR
· **Eye protection:** Tightly sealed goggles
· **Body protection:** Protective work clothing

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information:**

· **Color:**	Colorless
· **Odor:**	Acidic
· **Odor threshold:**	Not determined.

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· **Melting point/Melting range:**	no information available
· **Boiling point/Boiling range:**	no information available
· **Flammability (solid, gaseous):**	product is not combustible.
· **Explosion limits:**	
· **Lower:**	no information available
· **Upper:**	no information available
· **Flash point:**	no information available
· **Decomposition temperature:**	no information available
· **pH-value at 20 °C (68 °F):**	<0.5
· **Viscosity:**	
· **Kinematic viscosity:**	no information available
· **Dynamic viscosity:**	no information available
· **Solubility in / Miscibility with:**	
· **Water:**	Fully miscible.
· **Partition coefficient (n-octanol/water):**	no information available
· **Vapor pressure:**	no information available
· **Density:**	no information available
· **Relative density:**	no information available

· **Other information**	
· **Appearance:**	
· **Form:**	Solution
· **Important information on protection of health and environment, and on safety:**	
· **Danger of explosion:**	Product does not present an explosion hazard.
· **VOC %:**	
· **VOC content:**	0.00 %

10 Stability and reactivity

· **Reactivity:** No further relevant information available.
· **Chemical stability:**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions:** No further relevant informations available.
· **Conditions to avoid:** No further relevant information available.
· **Incompatible materials:** Avoid contact with strong oxidizers.
· **Hazardous decomposition products:** In case of fire: See Section 5

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11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:** Based on available data, the classification criteria are not met.
· **on the skin:** Causes severe skin burns and eye damage.
· **Specific target organ toxicity - single exposure:** May cause respiratory irritation.
· **Additional toxicological information:**

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
76-03-9	trichloroacetic acid	2B

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

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· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

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12 Ecological information

· **Toxicity:**
· **Aquatic toxicity:**
CAS 76-03-9 Trichloroacetic acid / Toxicity to algae: EC50/14d (Chlorella pyrenoidosa) = 0,27 mg/l
· **Persistence and degradability:** No further relevant information available.
· **Bioaccumulative potential:** No further relevant information available.
· **Mobility in soil:** No further relevant information available.
· **Results of PBT and vPvB assessment:**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects:**
· **Additional ecological information:**
· **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Water hazard class 2 (Self-assessment): hazardous for water

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Disposal must be made according to official regulations.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:**
Disposal of uncleaned packagings must be made according to official regulations in the same manner as the product.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN2564
· **UN proper shipping name**	
· **DOT**	Trichloroacetic acid, solution
· **ADR**	2564 TRICHLOROACETIC ACID SOLUTION, ENVIRONMENTALLY HAZARDOUS
· **IMDG, IATA**	TRICHLOROACETIC ACID SOLUTION

· **Transport hazard class(es)**

· **DOT**

· **Class** 8 Corrosive substances

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· **Label**	8
· **ADR, IMDG, IATA**	
	
· **Class:**	8 Corrosive substances
· **Label:**	8
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	III
· **Environmental hazards**	Not applicable.
· **Special precautions for user**	Warning: Corrosive substances
· **Hazard identification number (Kemler code):**	80
· **EMS Number:**	F-A,S-B
· **Segregation groups**	(SGG1) Acids
· **Stowage Category**	B
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· **IMDG**	
· **Limited quantities (LQ)**	5L
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· **UN "Model Regulation":**	UN 2564 TRICHLOROACETIC ACID SOLUTION, 8, III, ENVIRONMENTALLY HAZARDOUS

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15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **Proposition 65**
None of the ingredients is listed.

· **Chemicals known to cause cancer:**

76-03-9	trichloroacetic acid

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· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

76-03-9	trichloroacetic acid	SC

· **TLV (Threshold Limit Value)**

76-03-9	trichloroacetic acid	A3

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS05, GHS07
· **Signal word** Danger

· **Hazard-determining components of labeling:**
trichloroacetic acid
· **Hazard statements**
Causes severe skin burns and eye damage.
May cause respiratory irritation.
· **Precautionary statements**
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Product safety department
· **Contact:** +49 6221 13840-35
· **Date of preparation / last revision** 05/10/2023
· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
PBT: persistent, bioaccumulative, toxic substance (REACH)
vPvB: very persistent, very bioaccumulative substance (REACH)
REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
CLP: Regulation on classification, labelling and packaging of substances and mixtures
bw: body weight
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)

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NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin Corrosion 1A: Skin corrosion/irritation – Category 1A
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3